C L A I M S

1. A cyclone separator apparatus for separating solids from a gas-solid containing feed resulting in a gas-rich stream, the cyclone separator comprising an upright hollow circular housing fluidly connected to a dipleg having at its lower end a flapper valve, wherein the dipleg has a lower part, which lower part has a diameter which increases from the top of the lower part to the lower end of the dipleg.

2. Apparatus according to claim 1, wherein the diameter of the lower part increases continuously and the angle formed by the inner surface of the lower part of the dipleg and the vertical axis is between 0.2° and 4°.

3. Apparatus according to claim 2, wherein the angle is between 0.5° and 2°.

4. Retrofitting an existing cyclone separator apparatus for separating solids from a gas-solid containing feed resulting in a gas-rich stream, the cyclone separator comprising a dipleg having a constant diameter, wherein the lower part of the existing dipleg is modified in that this lower part has a diameter which continuously increases from the top of the lower part to the lower end of the dipleg resulting in a cyclone separator according to any one of claims 1-3.

5. Process to separate gas from solids making use of the apparatus as described in anyone of claims 1-3, wherein a pressure difference exists between the cyclone housing and just beneath the outlet opening of the dipleg of between 1000 Pa and 40000 Pa, the solids have a diameter ranging between $1*10^{-6}$ m and $200*10^{-6}$ m and wherein the solids are fluid catalytic catalysts.

6. Use of an apparatus according to any one of claims 1-3, in a fluid catalytic cracking process.

7. Use according to claim 6, wherein the lower end of the dipleg of the apparatus according to any one of claims 1-3 is located within a vessel in which the separated solids are disposed in.